

### REMARKS

The Applicants would like to thank the Examiner for the quick and courteous Office Action. The Applicants appreciate the Examiner's withdrawal of the previous art rejections.

The Applicants also greatly appreciate the Examiner's indication that claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent to include all of the limitations of the base claim and any intervening claims.

Claims 1, 3-12 and 14-32 are pending in the application.

Claims 1-10 and 14-32 are rejected.

Claims 1 and 19 are amended. It is respectfully submitted that no new matter is added.

Claims 2 and 13 are canceled.

### 35 U.S.C. §112, Second Paragraph, Rejections

The Examiner has rejected claims 2-5 and 19-32 under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner finds that claim 2 recites "the fluidizing apparatus comprises a flow chamber having a fluid inlet and a fluid outlet, [and] means for establishing a swirling or coanda flow in a fluid passing out of the fluid outlet." From the specification, it appears that the "means for establishing a swirling or coanda flow" corresponds to the flow chamber itself (see page 6, line 34-page 7, line 1). Thus, it appears that the applicant is claiming the flow chamber twice—once explicitly, and once again using "means for" language. Claims 3- 5 are dependent on indefinite claim 2.

Further the Examiner finds that the preamble of claim 19 recites "A method ... , the method:" which does not recite a transitional phrase such as "comprising" or "consisting of." For examination purposes, claim 19 will be interpreted using the open-ended transitional phrase "comprising." See MPEP 2111.03. Claims 20-32 are dependent on indefinite claim 19.

The Applicants appreciate the Examiner pointing out these concerns. The Applicants respectfully direct the Examiner's attention to the amendments to the claims herein. Independent claim 1 has been amended to include the claim 2 language. The claim 2 language to which the Examiner objects has been reworded to clarify that it is the flow chamber that is configured to establish a swirling or coanda flow, which as the Examiner notes is supported on page 6, line 34 to page 7, line 1 of the application as filed and thus does not constitute improper insertion of new matter. The Applicants respectfully submit that this change overcomes the instant rejection.

With respect to independent claim 19, the Examiner's attention is respectfully directed to the fact that the claim has been amended to include the transitional phrase "comprising" after the term "the method" in the preamble. The Applicants regret any confusion caused by the inadvertent omission of a transitional phrase. This inclusion of the word "comprising" is consistent with the Examiner's interpretation and thus does not constitute an improper insertion of new matter.

The Applicants respectfully submit that these amendments overcome the Examiner's rejections. Reconsideration is respectfully requested.

#### 35 U.S.C. §102(b) Rejection

The Examiner has rejected claims 1, 8, 9, 19-21, and 26-32 under 35 U.S.C. §102(b) as allegedly being anticipated by Mims (U.S. Patent No. 4,707,277).

The Examiner considered claim 1. The Examiner contends that Mims teaches an apparatus for transferring settled and suspended solids from an open vessel (10) into a closed vessel (28), where the closed vessel is not open to the atmosphere, the apparatus comprising a suction line (100) which extends from the closed vessel to the open vessel via drive means (92) and a solids feed line (26) which extends from a solids outlet (proximate 38) in the open vessel to a solids inlet (76) in the closed vessel, a supposed fluidising apparatus (22) being provided to fluidise the solids in the open vessel.

The Examiner considered claim 8. The Examiner alleges that Mims teaches that the closed vessel comprises a feed vessel (proximate 80) which feeds suspended solids into a transport vessel (102) containing a fluidising unit (110).

The Examiner considered claim 9. The Examiner asserts that Mims teaches that the transport vessel comprises a solids outlet (32) through which suspended solids are discharged at a controlled rate along a slurry discharge line.

The Examiner considered claim 19. The Examiner contends that Mims teaches a method for transferring settled and suspended solids from an open vessel (10) into a closed vessel (28), where the closed vessel is not open to the atmosphere, the method comprising: drawing fluid from the closed vessel into the open vessel (via 100); operating a supposed fluidising unit (22) with the said fluid (fluid in system of 10, 26, 28, and 100) to fluidise the settled and suspended solids; and drawing the fluid and fluidised solids from the open vessel into the closed vessel (via 26).

The Examiner considered claim 20. The Examiner notes that Mims teaches that the fluid is drawn from the closed vessel to the open vessel by means of a pump or compressor (92).

The Examiner considered claim 21. The Examiner finds that Mims teaches that the fluid is recirculated between the closed vessel and the open vessel, so that no additional fluid is added to or removed from the system (via 88, 94, 90, 96, and 98, see column 8, lines 8-20 and fig. 3).

The Examiner considered claim 26. The Examiner asserts that Mims teaches that no fluid other than the fluid in the open vessel (28) is used to fluidise and transport the settled and suspended solids from the open vessel to the closed vessel.

The Examiner considered claim 27. The Examiner finds that Mims teaches that the only fluid used to transport solids from the closed vessel to a discharge vessel (102) is the said fluid (fluid in system of 10, 26, 28, and 100).

The Examiner considered claims 28-32. It is contended by the Examiner that Mims's method is capable of operating below sea level to remove material for transport to shore, capable of removing material from the seabed for dredging or

mining, capable of removing radioactive waste solids, capable of conveying material from the base of a mine shaft to the surface, and capable of conveying a material directly into the suction line of a slurry pump.

The Applicants respectfully traverse. A patent claim is anticipated, and therefore invalid, only when a single prior art reference discloses each and every limitation of the claim. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1047, 34 U.S.P.Q.2d 1565 (Fed. Cir.), cert. denied, 116 S.Ct. 516 (1995).

The Examiner contends that Mims' first pump **22** is a fluidising apparatus, which is factually incorrect. A pump is not a fluidising unit; these two components are separate and distinct. The Examiner is respectfully requested to note that in Applicants' FIG. 1 a pump **24** is used in conjunction with fluidising unit **10**, and that a pump **32** is used in conjunction with fluidising unit **12**. Were these components the same, it would not be necessary to use two different such components together at each location.

To emphasize that the claimed fluidising apparatus is different from a pump, the Applicants have amended independent claim 1 to recite that "the fluidising apparatus comprises a flow chamber having a fluid inlet and a fluid outlet, the flow chamber being configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet". Further, the Applicants have amended independent claim 19 to include similar language. Support for these amendments may be found in dependent claim 2 as filed (now canceled as redundant), and thus these amendments do not constitute improper insertion of new matter.

The Applicants respectfully submit that with these amendments, the single prior art reference does not disclose each and every limitation of the claimed invention. Thus, the Applicants respectfully submit that the instant rejection must be withdrawn. Reconsideration is respectfully requested.

35 U.S.C. §103(a) Rejection Over Mims in view of Evans, et al.

The Examiner has rejected claims 2-5 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mims (U.S. Patent No. 4,707,277) in view of Evans (U.S. Patent No. 2,010,538) for reasons of obviousness.

The Examiner considered claims 2-5. The Examiner admits that Mims does not explicitly teach that the fluidising apparatus comprises a flow chamber, a means for establishing a swirling or coanda flow, and a transport outlet. The Examiner contends that Evans teaches a fluidising apparatus comprising a flow chamber (proximate 73 in fig. 25) having a fluid inlet (74) and a fluid outlet (72), means (72 and 73) for allegedly establishing a swirling or coanda flow in a fluid passing out of the fluid outlet, and a transport outlet (63 and 56) for transporting fluidised material away from the flow chamber. The Examiner contends that Evans's transport outlet is situated externally of the flow chamber, directly above the flow chamber, and close to the flow chamber (see figs. 24 and 25). The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Mims's fluidising apparatus with Evans's fluidising apparatus in order to reduce the number of moving parts located under water in order to improve reliability and maintenance.

The Applicants respectfully traverse. The Applicants submit that it is the Examiner's burden to establish a case of *prima facie* obviousness of the pending claims. *In re Oeticker*, 977 F.2d 1443, 1445; 24 U.S.P.Q.2d 1443 (Fed. Cir. 1992), and that as will be established, a *prima facie* case of obviousness has not been made herein.

The Applicants respectfully disagree with the Examiner that Evans' restricted valve or nozzle **72** is allegedly a "fluidising apparatus [that] comprises a flow chamber having a fluid inlet and a fluid outlet, the flow chamber being configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet" as now required by the claims. The Examiner's attention is respectfully directed to page 3, lines 65-73 where the nozzle **72** is discussed:

The pipe section **63** has an offset pipe portion **11** thru [through] which the sediment is sucked. The lower end of the section **63** has a *restricted valve or jet nozzle 12 formed by a converging wall 13* and a pressure pipe **14** is connected to such lower end. It will be obvious that *if a fluid is forced 70 thru [through] the pressure pipe and thru [through] the jet nozzle, a vacuum will be created for sucking the sediment thru [through] the offset pipe portion 11.* (Emphasis added.)

The Applicants respectfully submit that there is nothing in this passage, or anywhere else in Evans where it is disclosed, taught, hinted or suggested that jet nozzle **12** is or may be a fluidising apparatus that comprises a flow chamber having a fluid inlet and a fluid outlet, where the flow chamber is configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet as required by amended claim 1. Evans does not teach, hint or suggest anything about swirling or coanda flow.

The flow from Evans' jet nozzle **12** can only be expected to be linear, more specifically straight up as seen in Evans' FIG. 25. Linear or straight flow is not swirling or coanda flow. Nor is there any teaching, suggestion or hint in Mims or Evans that the straight or linear flow from Evans' jet nozzle **12** may be modified to be swirling or coanda flow, as claimed.

For all of these reasons the Applicants respectfully submit that the Examiner has not established a *prima facie* rejection of the claims under 35 U.S.C. §103(a), and thus the instant rejection should be withdrawn. Reconsideration is respectfully requested.

#### 35 U.S.C. §103(a) Rejection Over Mims in view of Young, et al.

The Examiner rejected claims 6, 7, 10, 14-17, and 22-25 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mims (U.S. Patent No. 4,707,277) in view of Young (U.S. Patent No. 5,098,667) for reasons of obviousness.

The Examiner considered claims 6 and 7. The Examiner admits that Mims does not explicitly teach a flow meter. The Examiner asserts that Young teaches a flow meter (58, 56) for controlling the rate at which solids are transferred from a first vessel (20) into a second vessel ("TO REACTOR," see fig. 1). The Examiner finds that Young's flow meter measures the rate of flow of suspended solids (see

column 5, lines 40-44). The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Mims's apparatus with Young's flow meter in order to measure and control the flow of slurry from the open vessel to the closed vessel.

The Examiner considered claim 10. The Examiner admits that Mims does not explicitly teach means for measuring the flow rate of slurry discharge. The Examiner asserts that Young teaches a means (flow meter 58, 56) on a slurry discharge line (60) for measuring the flow rate of slurry discharge ("TO REACTOR," see fig. 1). The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify Mims's slurry discharge line with Young's flow meter in order to measure and control the flow of slurry from the slurry discharge line.

The Examiner considered claims 14-17. The Examiner admits that Mims does not explicitly teach valves. Young teaches a valve (78), computer (100), and flow meter (58, 56) for controlling flow rate of suspended solids. Young's flow meter 58, 56, in conjunction with gamma density gauge 74 and computer 100, is noted to be a mass flow meter as described in column 2, lines 7-12. The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Mims's apparatus with Young's valve, computer, and flow meter in order to control the flow of slurry. The valve, computer, and flow meter of Mims in view of Young are capable of performing the recited method steps (functional limitations) in claims 14-16. Please see MPEP 2106 (IV)(8) and *R.A.C.C. Indus. v. Stun-Tech, Inc.*, 178 F.3d 1309 (Fed. Cir. 1998). Further the Examiner admits that Mims in view of Young does not explicitly teach valves and flow meters. The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to duplicate the valve and flow meter of Mims in view of Young, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. Please see *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

The Examiner considered claims 22-24. The Examiner finds that Mims teaches discharging fluid and fluidised solids from the closed vessel into a dis-

charge vessel (102), but admits that it does not explicitly teach controlling the rate of discharge. The Examiner finds that Young teaches controlling (via 58, 56, 100, and 78) the rate of discharge of fluid and fluidised solids from a first vessel (20) into a second vessel ("TO REACTOR," see fig. 1) by controlling a valve (78) on a pipe (60) connecting the vessels so that a desired concentration of solids is discharged at a constant rate (see column 5, lines 28-37). The Examiner contends that it would have been obvious to a person having ordinary skill in the art to modify Mims's method with Young's step of controlling the rate of discharge of solids in order to accurately convey a predetermined quantity of solids to a discharge vessel.

The Examiner considered claim 25. The Examiner asserts that Mims teaches fluidising the solids in the discharge vessel (via 110).

Again, the Applicants respectfully traverse. The Applicant submits again that it is the Examiner's burden to establish a case of *prima facie* obviousness of the pending claims. *In re Oeticker, id*, and that as will be established, a *prima facie* case of obviousness has not been made herein.

The Applicants again respectfully direct the Examiner's attention to the fact that independent claims 1 and 19 have been amended to recite that "the fluidising apparatus comprises a flow chamber having a fluid inlet and a fluid outlet, the flow chamber being configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet". The Applicants respectfully submit that neither Mims nor Young, et al., taken alone or together, teach, suggest or hint at such a fluidising apparatus. There is no suggestion in either reference to modify the pump of Mims to be the recited fluidising apparatus.

Thus, the Applicants again respectfully submit that a *prima facie* rejection of this claim over the references has not been established and that the rejection should be withdrawn. Reconsideration is respectfully requested.



35 U.S.C. §103(a) Rejection Over Mims in view of Young, et al. and Gomi, et al.

The Examiner rejected claim 18 under 35 U.S.C. 103(a) as allegedly being unpatentable over Mims (U.S. Patent No. 4,707,277) in view of Young (U.S. Patent No. 5,098,667), and further in view of Gomi (U.S. Patent No. 5,796,012) for reasons of obviousness.

The Examiner considered claim 18. The Examiner asserts that Mims in view of Young teaches flow meters, but admits that they do not explicitly state that the flow meters are coriolis or ultrasonic meters. The Examiner finds that Gomi teaches a coriolis flow meter. The Examiner alleges that it would have been obvious to a person having ordinary skill in the art to modify the flow meters of Mims in view of Young with Gomi's coriolis flow meter in order to correct instrumental errors caused by a change in density and temperature of the fluid (see Gomi, abstract, lines 1-3).

Once more, the Applicants respectfully traverse. Again, the Applicant submits that it is the Examiner's burden to establish a case of *prima facie* obviousness of the pending claims. *In re Oeticker, id*, and that as will be established, a *prima facie* case of obviousness has not been made herein.

The Applicants one more respectfully direct the Examiner's attention to the fact that independent claim 19 has been amended to recite that "the fluidising apparatus comprises a flow chamber having a fluid inlet and a fluid outlet, the flow chamber being configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet". The Applicants respectfully submit that neither Mims nor Gomi, et al., taken alone or together, teach, suggest or hint at such a fluidising apparatus. There is no suggestion in either reference to modify the pump of Mims to be the recited fluidising apparatus that is configured to establish a swirling or coanda flow in a fluid passing out of the fluid outlet.

Thus, the Applicants again respectfully submit that a *prima facie* rejection of this claim over the references has not been established and that the rejection should be withdrawn. Reconsideration is respectfully requested.

It is respectfully submitted that the amendments and arguments presented above place the claims in condition for allowance. Reconsideration and allowance of the claims are respectfully requested. The Examiner is respectfully reminded of his continuing duty to indicate allowable subject matter. The Examiner is invited to call the Applicants' attorney at the number below for any reason, especially any reason that may help advance the prosecution.

Respectfully submitted,  
James Edward Delves, et al.,

/David L. Mossman/

David L. Mossman  
Registration No. 29,570  
Attorney for Applicants  
Telephone No. 512/219-4026  
Facsimile No. 512/219-4036

Mossman, Kumar & Tyler  
P. O. Box 421239  
Houston, Texas 77242  
E-mail: dmossman@mktlaw.us.com